

**Remarks**

Application Status and Disposition of Claims

This paper responds to the Office Action mailed July 15, 2010.

In the Action, the Office considered claims 1-12 and 33, with claims 13-32 having been withdrawn from consideration as directed to a nonelected invention.

The present amendment does not add, cancel, or amend any claims. Thus, claims 1-12 and 33 remain pending and under consideration.

Information Disclosure Statement

The Action has confirmed consideration of the Information Disclosure Statement filed on January 13, 2010, and returned, with the Official Action, signed and initialed copies of the Forms PTO-1449 that accompanied the IDS. However, the Action claims that the IDS fails to comply with 37 C.F.R. § 1.98(a)(3) because the IDS did not indicate the relevance of EP 0771589 and because EP 0771589 was not in English.

Applicants note that 37 C.F.R. § 1.98 provides that: (a) any information disclosure statement filed under § 1.97 shall include the items listed in paragraphs (a)(1), (a)(2) and (a)(3) of this section. Section (a)(1) requires a list of all patents, publications, applications, or other information submitted for consideration by the Office. U.S. patents and U.S. patent application publications must be listed in a section separately from citations of other documents. Each page of the list must include: (i) The application number of the application in which the information disclosure statement is being submitted; (ii) A column that provides a space, next to each document to be considered, for the Examiner's initials; and (iii) A heading that clearly indicates that the list is an information disclosure statement.

Section (a)(2) requires a legible copy of: (i) each foreign patent; (ii) each publication or that portion which caused it to be listed, other than U.S. patents and U.S. patent application publications unless required by the Office; (iii) for each cited pending unpublished U.S. application, the application specification including the claims, and any

drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion; and (iv) all other information or that portion which caused it to be listed.

Section (a)(3) requires (i) a concise explanation of the relevance, as it is presently understood by the individual designated in § 1.56(c) most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language. The concise explanation may be either separate from Applicant's specification or incorporated therein.

MPEP 609.04(a) states that "[t]he concise explanation may be either separate from the specification or part of the specification. If the concise explanation is part of the specification, the IDS listing should include the page(s) or line(s) numbers where the concise explanation is located in the specification." It further states that "[t]he requirement for a concise explanation of relevance is limited to information that is not in the English language . . . Submission of an English language abstract of a reference may fulfill the requirement for a concise explanation. Where the information listed is not in the English language, but was cited in a search report or other action by a foreign patent office in a counterpart foreign application, the requirement for a concise explanation of relevance can be satisfied by submitting an English-language version of the search report or action which indicates the degree of relevance found by the foreign office. This may be an explanation of which portion of the reference is particularly relevant, to which claims it applies, or merely an 'X', 'Y', or 'A' indication on a search report."

Applicants note that the IDS indicated that EP 0771589 (Document F) was a family member of U.S. Patent No. 5,919,566 (Document C), which the Examiner has considered. The IDS also provided the Supplementary European Search Report, which indicated the relevance of EP 0771589. Accordingly, the IDS was compliant and the Examiner errs in refusing to indicate her consideration of the document.

Applicants again request that the Examiner indicate her consideration of the document.

Claim Rejections under 35 U.S.C. § 102(b)

The Office Action rejects claims 1-8 and 33 under 35 U.S.C. § 102(b) as allegedly being anticipated by Honma et al. (U.S. Application Publication No. 2003/0003340). The Action asserts that Honma et al. teaches all the elements of claims 1-8 and 33. Applicants respectfully disagree and submit that Honma et al. fails to disclose all of the elements of the presently claimed invention.

For convenience, Applicants reproduce claim 1:

“A proton conducting membrane comprising a support filled with a proton conducting structure ( $\beta$ ) comprising an acid-containing structure containing an acid group, the support comprising an organic-inorganic composite structure ( $\alpha$ ) having a crosslinked structure formed by a metal-oxygen bond and *an open-cell structure having internally-formed pores* connected continuously to each other by said crosslinked structure.” (Emphasis added.)

Applicants note that Honma et al. does not disclose “pores,” but rather, has ion-conducting “paths.” According to Honma et al., these “paths” are formed by a *continuous* phase including the inorganic acid, which itself allows for the ion conduction. Thus, where the present invention includes an open cell structure with internally formed pores, suggesting a tube or tunnel type structure, the “paths” of Honma et al., would seem to be solid.

Applicants respectfully note that the language of Honma et al. is clear and unambiguous in this regard. That is, Honma et al. does not refer to “pores” in some instances, but “paths” in others. Rather, Honma et al. consistently refers to ion conduction paths. Applicants respectfully submit that these are different structural features.

As Honma et al. fails to explicitly disclose Applicants’ claimed pores, the rejection must have been made upon the basis of inherency. However, the Office fails to explain how Honma et al.’s composition necessarily results in a porous structure. Applicants note that rejections based on theories of inherency require more than

assertions based on likelihoods or probabilities: the missing feature must *necessarily* be present in the cited art. Accordingly, the Office bears the initial burden of explaining why the claimed pore structure would necessarily be present in the disclosure of Honma et al.

Applicants note that with regard to the rejection of claims 4 and 5, the Office Action admits that Honma et al. fails to mention porosity. Applicants submit that this lack of mention of porosity is strongly suggestive of the fact that Honma et al.'s structure is *not porous*. This fact also weighs against a conclusion that pores might be present in Honma et al.'s disclosed structure.

Applicants further note that whereas the present invention includes a support filled with a proton conducting structure ( $\beta$ ) comprising an acid-containing structure containing an acid group, Honma et al. discloses the use of an inorganic acid. Again, Applicants submit that this suggests that the Honma et al. structure differs from the presently claimed invention.

The only argument the Office seems to set forth in the Action appears to be based on a theory that only a porous passageway could possibly transport ions across a membrane. (See third full paragraph on page 3 of Action.) The Office seems to argue that because Honma et al.'s membrane allows for proton conduction, there must be pores to permit the ions to pass through the membrane. This assumption is flawed: there are examples of *nonporous* proton-conducting membranes in the art. Thus, the Office's assumption that, because Honma et al. conducts protons it therefore must be porous, is misplaced. Again, if the Office wishes to maintain this rejection, it bears the burden of explaining why it believes that Honma et al.'s structure necessarily includes pores.

For at least the foregoing reasons, Applicants respectfully submit that the Office has failed to carry its burden in making a *prima facie* case of anticipation over Honma et al. Applicants request withdrawal of the rejection.

Claim Rejections under 35 U.S.C. § 103

The Action rejects claims 4, 5, and 7-12 under 35 U.S.C. § 103 as allegedly being unpatentable over Honma et al. in view of Curlier et al. (U.S. Published Application No. 2004/0197613).

As explained above, the presently claimed invention includes an open-cell structure having internally-formed pores connected continuously to each other by the crosslinked structure. Honma et al., on the other hand, fails to disclose such structure. The Office fails to explain how Curlier et al. fills this deficiency or how its teaching would lead a person skilled in the art to modify Honma et al.'s teaching to arrive at the present invention. Thus, this rejection is improper and should be withdrawn for at least this reason.

With regard to the specific structural features of the pores of the presently recited structure, the Office asserts that while Honma et al. fails to disclose porosity, the claimed features of claims 4 and 5 (relating to porosity and pore diameter) would be a matter of optimization to a person skilled in the art. Applicants submit that this argument completely lacks foundation. First, Honma et al. fails to disclose a structure having any pores, let alone pores satisfying Applicants' claimed degree of porosity and pore size. Second, even if Honma et al. did disclose a porous structure, the rejection fails because the Office has failed to support the optimization argument with any evidence that porosity or pore size are result-effective variables. If the Office wishes to maintain this rejection, the Examiner is respectfully requested to provide the documentation to support her assertion that it "*is known in the art* in order to improve the fuel cell." (Page 4, lines 1-2.) Finally, even if the Office is able to provide such support, Applicants note that the Examiner will have to provide a reasonable explanation for modifying Honma et al.'s teachings to include pores, because as disclosed, there are no pores present. For at least these reasons as well, the rejection is improper as applied at least to claims 4 and 5.

Applicants submit that the rejection of claims 9-12 is improper for at least the same reasons the claims from which they depend is improper.

Double Patenting Rejections

The Action maintains the rejection of claims 1, 6, 9, and 10 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 8, and 9 of U.S. Patent No. 7,214,756. Applicants respectfully request that the rejection be held in abeyance until a determination of allowable subject matter is made.

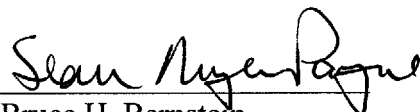
Conclusion

With the foregoing remarks, Applicants have addressed all rejections and respectfully request their withdrawal. Applicants believe that the present application is in condition for allowance.

Applicants believe that no additional fee is necessary. However, if a fee is deemed required for ensuring the pendency and consideration of this amendment, the undersigned authorizes the Office to charge Deposit Account No. 19-0089 any requisite fee.

Should there be any questions, the Examiner is invited to contact the undersigned at the below listed telephone number.

Respectfully submitted,  
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